Jan. 2, 1923. 1,440,402

H. MEREDITH-JONES.
ELECTRIC HEATER.
FILED DEC. 14, 1921.

4 SHEETS-SHEET 1

Fig. 2

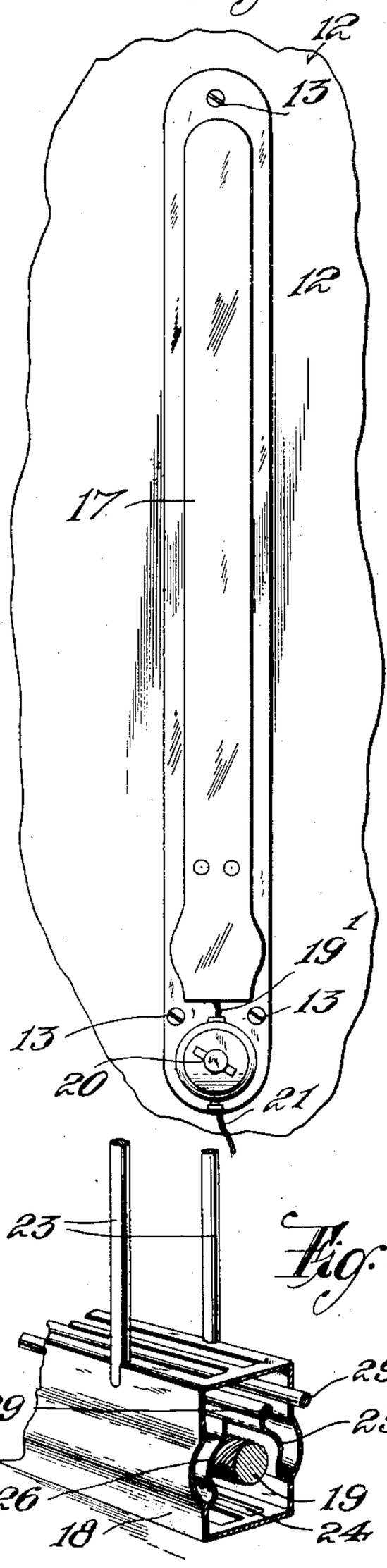

Fig. 1

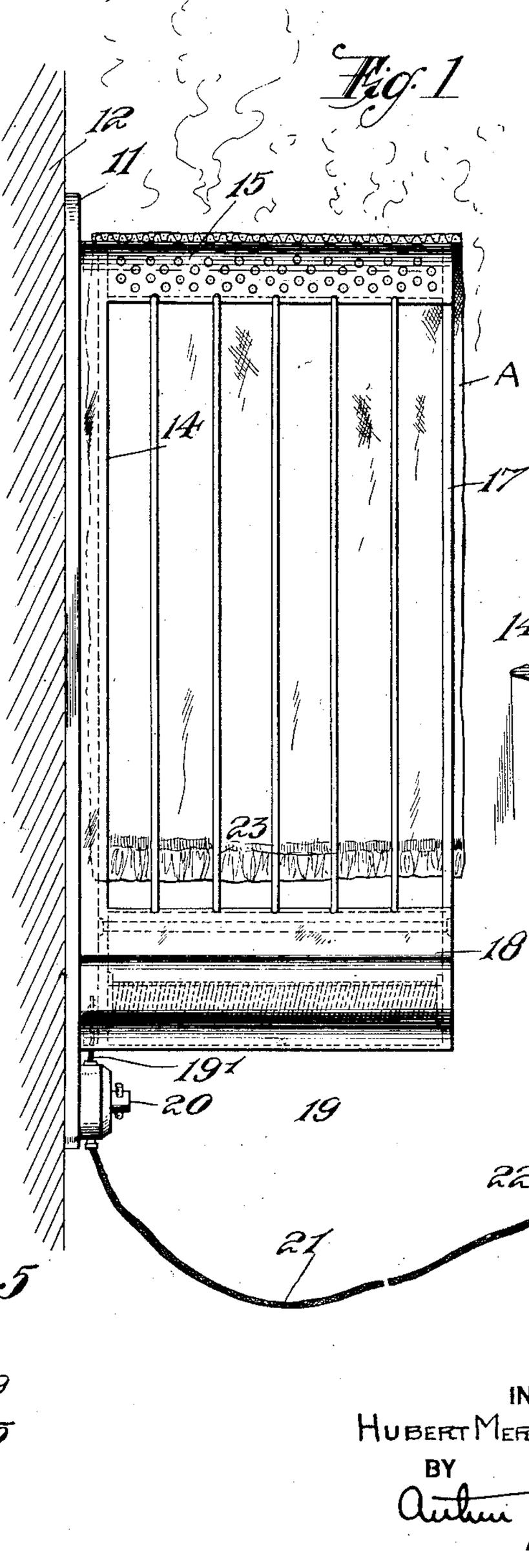

Fig. 6

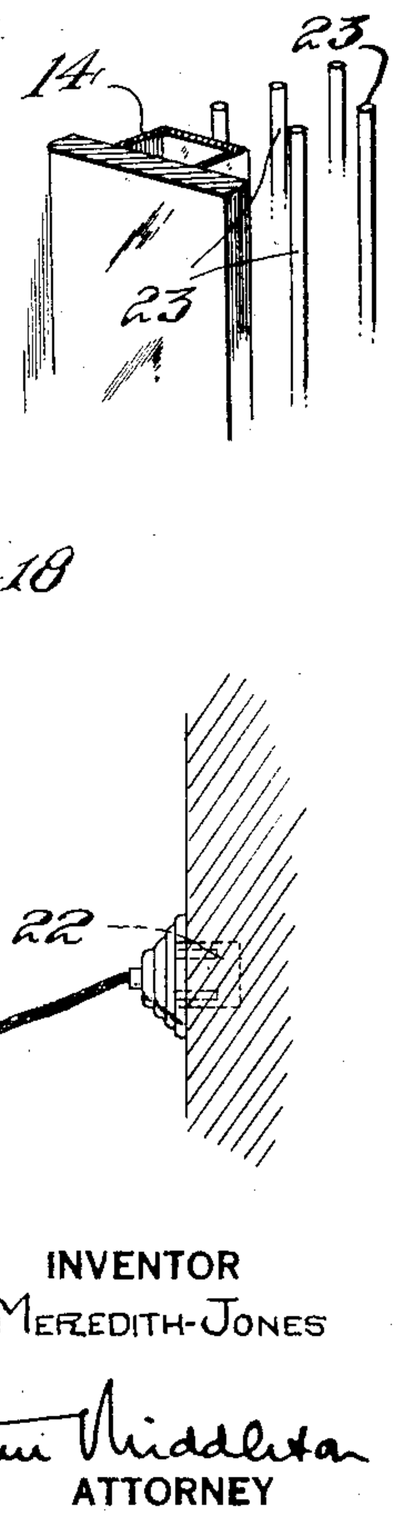

Fig. 5

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4 SHEETS-SHEET 2

Fig. 4

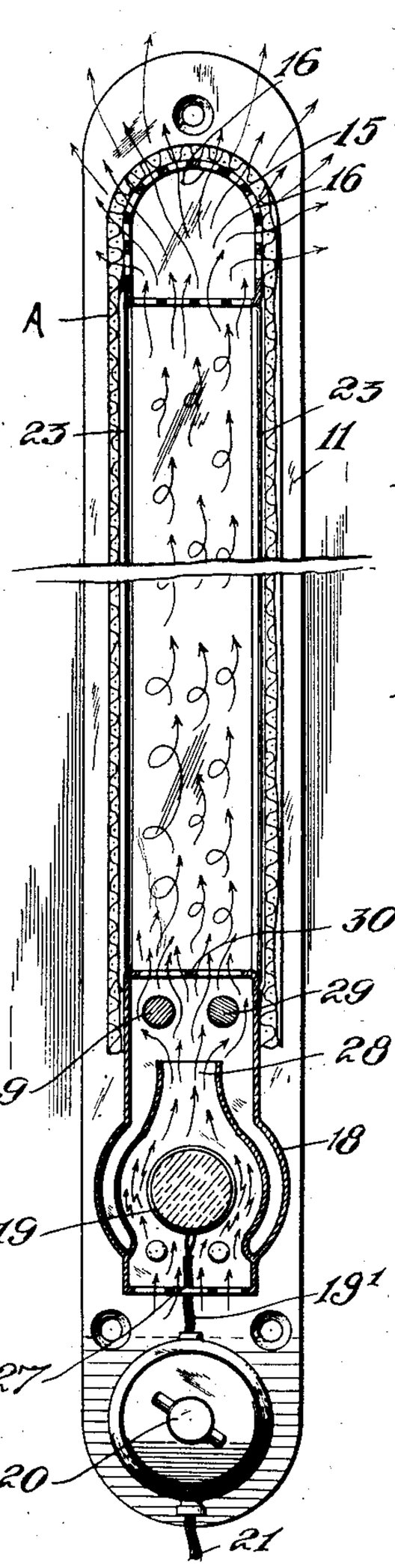
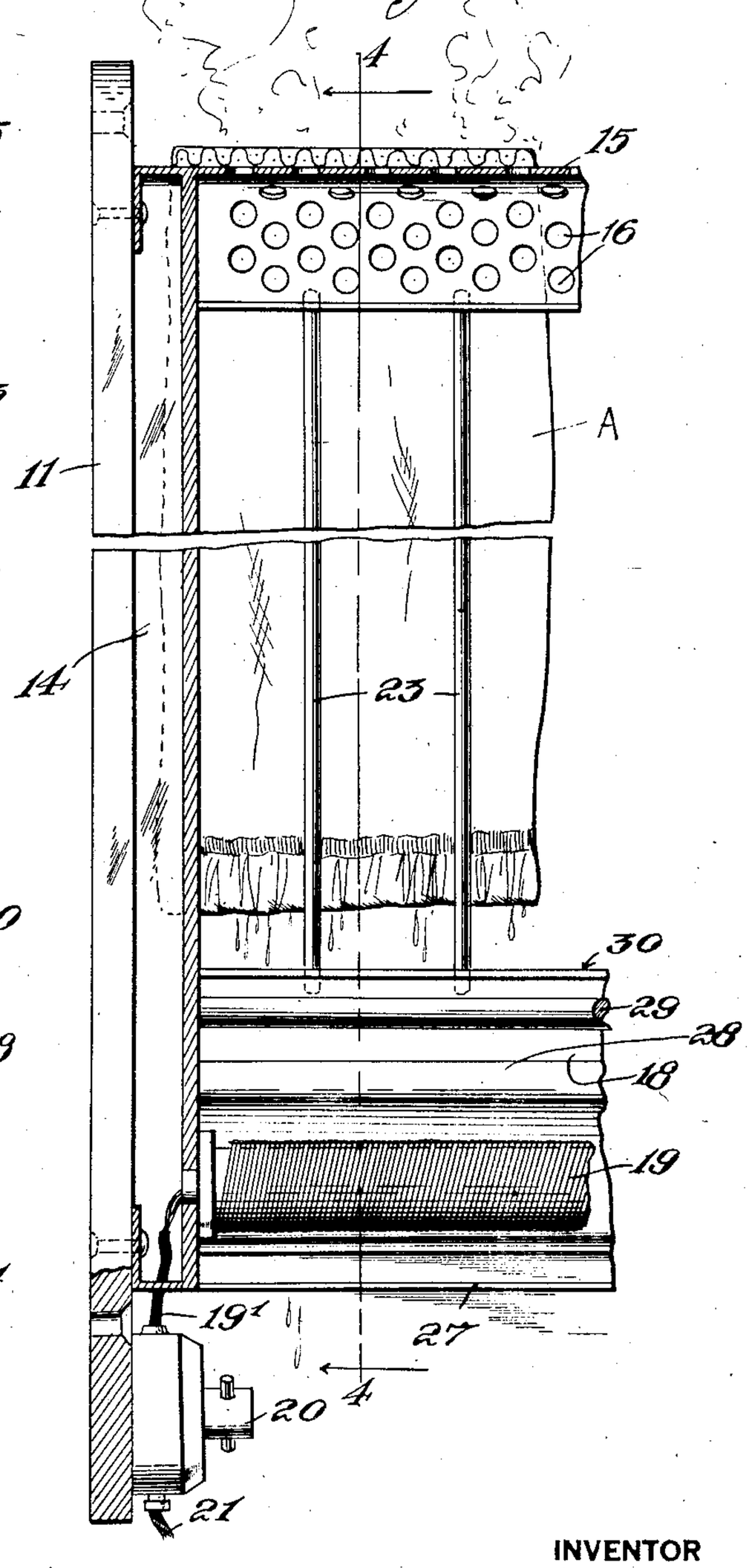


Fig. 3



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4 SHEETS-SHEET 3

Fig. 7

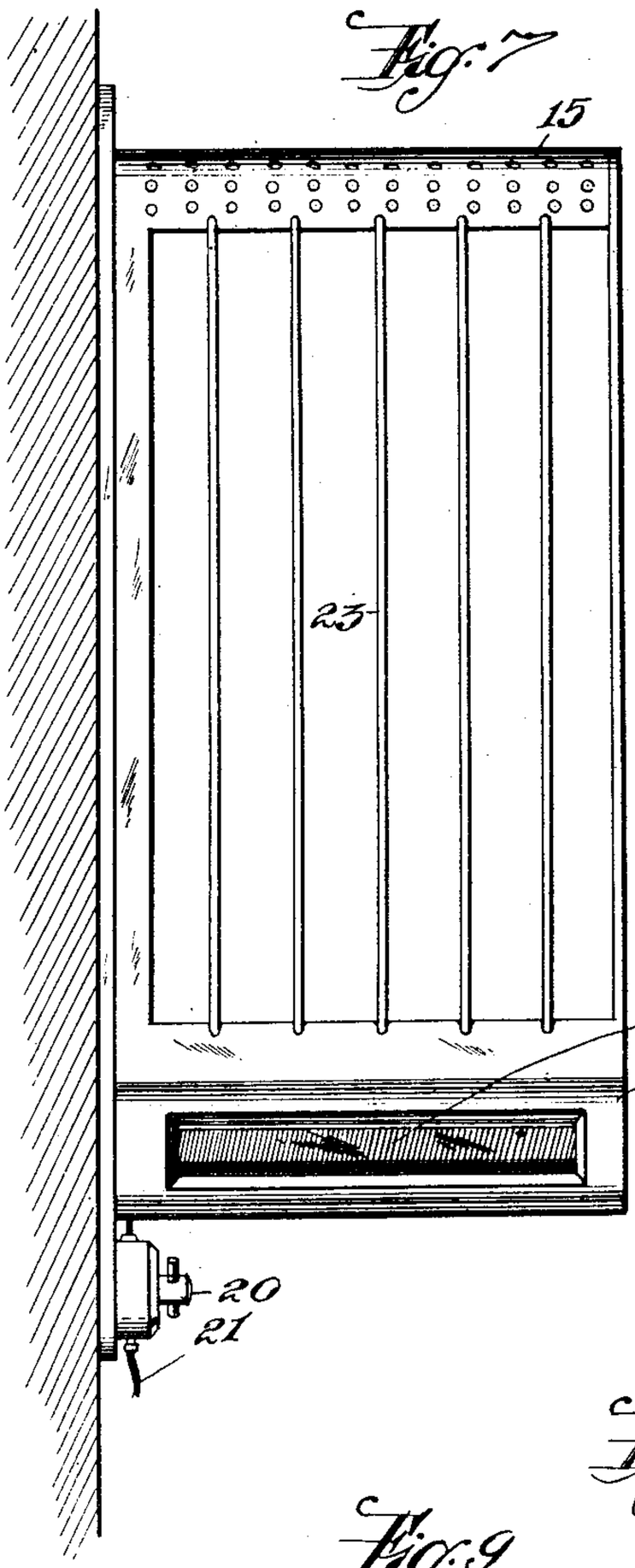


Fig. 8

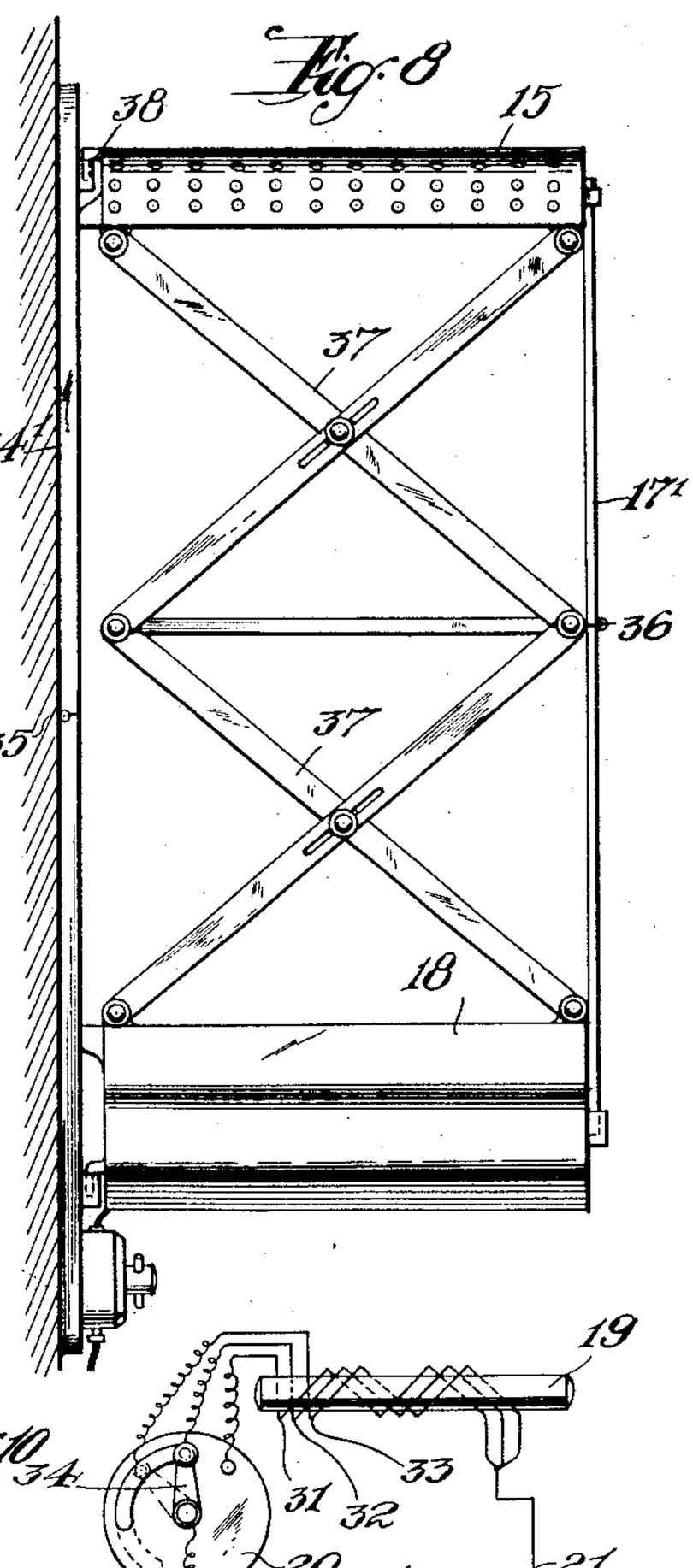
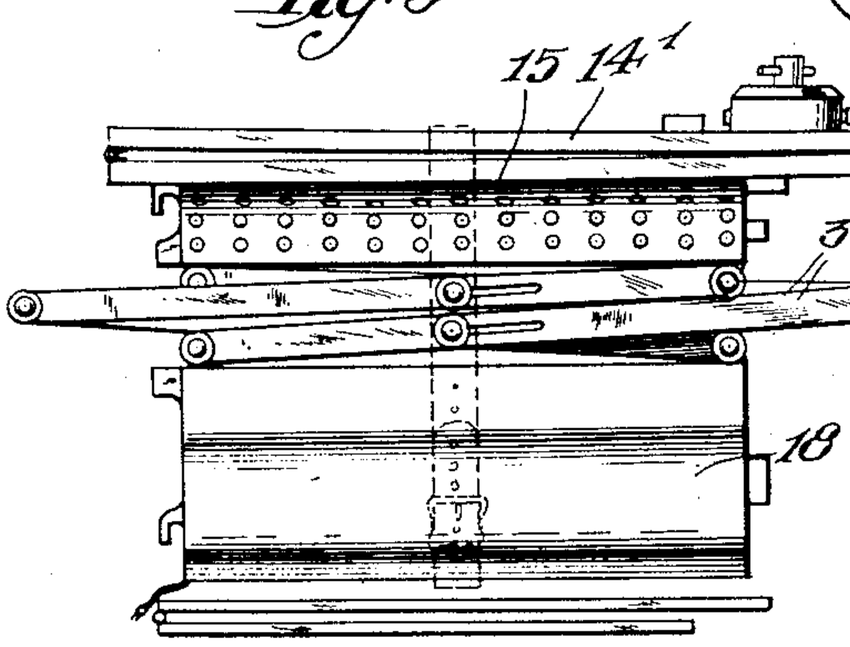


Fig. 10

Fig. 9



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4 SHEETS-SHEET 4

Fig. 10a

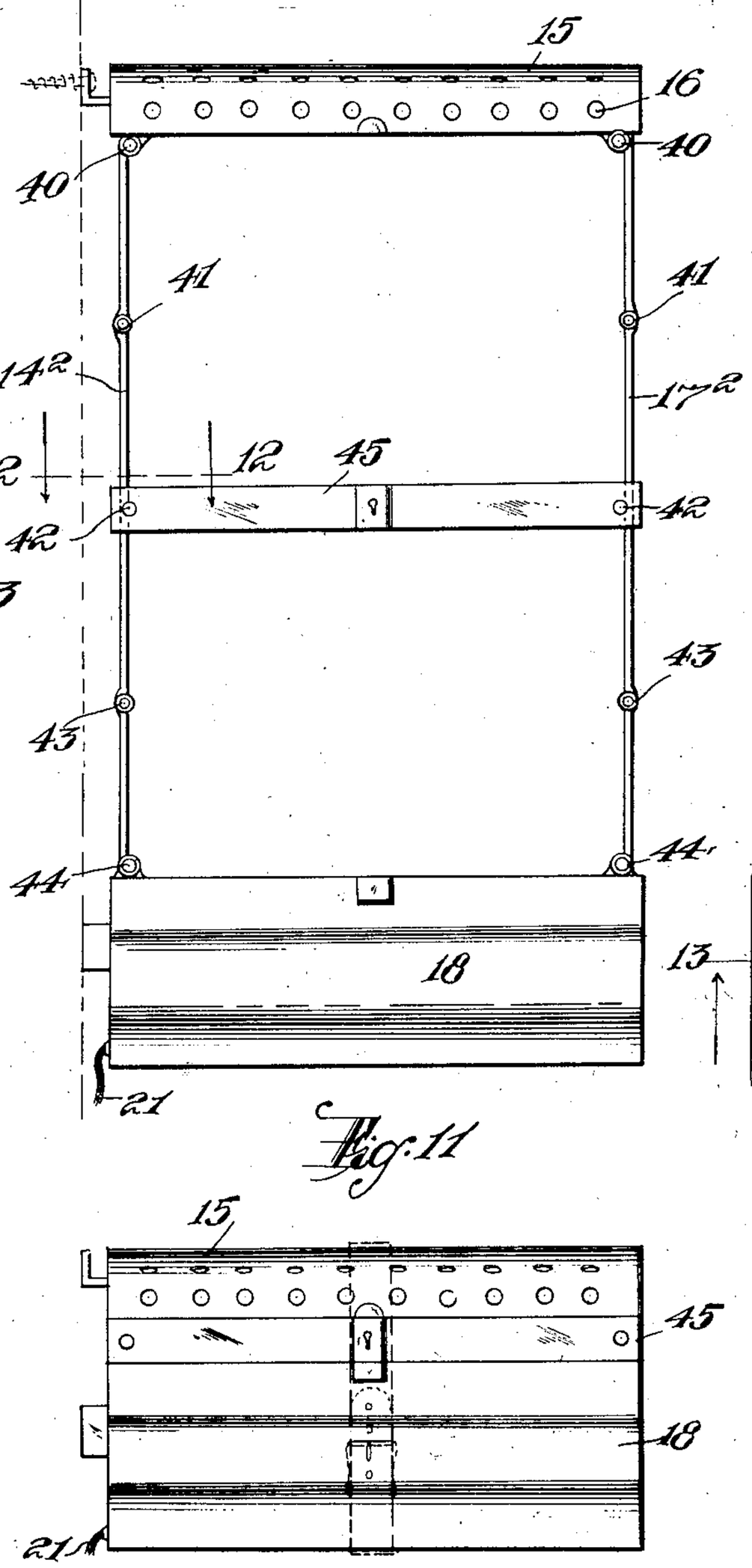

Fig. 13

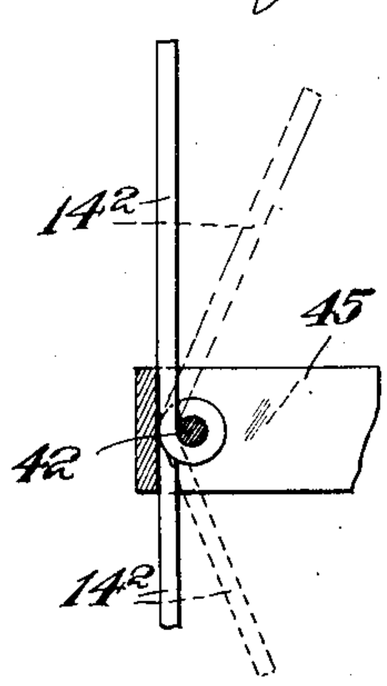

Fig. 12

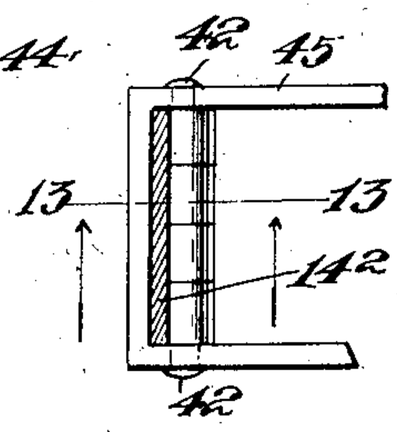

Fig. 11

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Patented Jan. 2, 1923. 1,440,402

UNITED STATES PATENT OFFICE.

HUBERT MEREDITH-JONES, OF NEW YORK, N. Y.

ELECTRIC HEATER.

Application filed December 14, 1921. Serial No. 522,339.

To all whom it may concern:

Be it known that I, HUBERT MEREDITH-JONES, a citizen of the United States, residing at New York, N. Y., have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification.

This invention relates to electrical heaters and its object is to devise a heater having such characteristics that it may be used to take the chill off of a room and at the same time, the heater is provided with such accessories that towels, clothing or similar articles may be thrown over or supported in proximity to the heater so that they may be dried or warmed. Another object is to provide such a device which is not only attractive in appearance and which is collapsible so that it can be readily carried about when one is traveling.

The invention consists essentially in an electrical heating element having associated therewith, means for supporting flexible articles in proximity to the heater whereby they may be heated or dried with means for causing a draft of heated air to eddyingly pass upward from the heater to be dispersed against the article to be heated. The invention is broad enough to include more specific means such as the means for creating the draughts, the means for creating the eddies, means for varying the heat given out by the heating element and means for collapsing the device into convenient carrying size.

I have disclosed herein an embodiment of my invention but it is to be understood that this is shown and described in an illustrative sense and not a limiting one for obviously the invention may be embodied in other forms without departing from the spirit and scope thereof.

The embodiment chosen for illustration is shown in the accompanying drawings in which:

Figure 1 shows a side elevation of my device;

Fig. 2 is a front elevation;

Fig. 3 is an enlarged partial side elevation with parts in section;

Fig. 4 is a vertical sectional view taken along the lines 4—4 in Fig. 3;

Fig. 5 is a partial perspective view taken through the heating element with the draught producing means which might be considered as having been taken through those elements where the line 4—4 passes therethrough;

Fig. 6 is a perspective partial view of the insulating air chamber against the end wall of the device;

Fig. 7 shows a side elevation of a modified form of the device wherein a window is provided through which the glows of the heating element may be seen;

Fig. 8 shows a side elevation of the further modified form of the device which is collapsible while

Fig. 9 shows the form of Fig. 8 in collapsed position.

Fig. 10 shows one method of varying the intensity of heat given off by the heating element.

Fig. 10ª shows a modified form of a collapsible heater made in accordance with this invention.

Fig. 11 shows the device of Fig. 10ª in collapsed condition.

Fig. 12 is a sectional view taken along the line 12—12 in Fig. 10ª, while Fig. 13 is a sectional view taken along the lines 13—13 in Fig. 12.

Speaking more particularly, the invention consists in the provision of a heater having an end plate 11 attachable to a wall 12 by any suitable means such as screws 13. Projecting laterally from the end plate 11 is a frame work having an end wall 14, a curved top 15 having perforations 16 therein, a front plate 17 and a bottom box-like element 18 in which the heating element 19 is adapted to be housed. The heating element is connected to the switch 20 by means of wires 19′. The switch controls the heating element and is preferably supported from the end plate 11 and this switch 20 is in circuit with any suitable electrical means 21 to an electrical fixture 22 in circuit with a source of electricity.

A towel or light article A can be hung over the heater by being supported from the top plate 15 and in order to prevent its free ends from being drawn inwardly toward each other to obstruct the upward flow of heated air from the heated element, I provide wires 23 or other such guards extending from the bottom box-like element 18 to the curved plate 15.

The interior construction of the box-like element 18 I consider important and therefore, I may say that it has openings in its

base such as the slots 24 through which air is adapted to be drawn because of two oppositely directed curved deflectors 25 and 26 which have enclosed between them the heating element 19. These deflectors have their inlet 27 larger than their outlet 28 so that an injector action is produced whereby the upward draught of heated air from the heating element is accelerated and at the same time there is produced a certain retardation of the air in passing around the heating element whereby it can be more thoroughly heated. The flow of air is shown by the arrows in Fig. 4 and the Z-shaped arrows indicate this retardation of air. I am very anxious to prevent any downflow of air within the heater for I particularly want it all to rise and therefore, I provide means for causing the heated air, upon leaving the deflectors 25 and 26 to rise eddyingly as shown by the curled arrows in Fig. 4 and to that end I provide rods 29 and possibly a slotted insert 30 to break up the flow of air and produce these eddies. The heated air thus rises and passes through the perforations 16 in the top plate 15 whereby it is brought into contact with the towel or other article A which it heats and dries. The rising air also heats and dries the free ends or sides of the towel A which hangs down against the wires 23 on each side of the rising column of heated air.

In order that the end plate 11 or the wall may not be unduly heated, I prefer to make the end wall hollow or in the shape of a trough as illustrated in Fig. 6 whereby it encloses a column of dead or insulating air.

In order that the glow of the heating element 18 may be made visible, I may provide a window 30 in the bottom part 18 of the heater. This window is shown in Figure 7 and is made of some transparent fireproof material.

The heating elen ent 19 may be controlled to give out different intensities of heat by means of resistance incorporated into the switch 20 such as is usual in a rheostat, although I may prefer to use the method of control shown in Figure 10, wherein I provide in the heating element, a plurality of heating resistances 31, 32 and 33, connected in series with the electrical circuit 21. With such an arrangement, I provide the switch 20 with a contact arm 34 of such a length that it may cut in any number of the resistances 31, 32 and 33 to have current pass therethrough. Therefore, if I have the contact arm 31 close the circuit through the resistance 33 only, the current passing therethrough causes the resistance 33 to come to bright red heat. If, instead of having the contact arm cutting in resistance 33 only, I move it to cut in resistances 33 and 32, I find that these two resistances will glow at dull red heat, whereas if I have the contact to cut in all three resistances, they will only be brought to black heat. This is a simple way of controlling the heat given off by the heating element 18 and a way which involves an apparatus which has a low cost.

That the device may be made collapsible, I may hinge the back plate 14′ at 35 and similarly, the front plate 17′ will be hinged at 36 but instead of having the wires 23 as guards between the bottom part 18 and the top part 15, I provide toggles 37 to permit the whole device to be collapsed as shown in Fig. 9. I devise suitable fastening means at 38 to maintain the device in extended position as shown in Fig. 8.

Whereas Figures 8 and 9 show one form of collapsible heater, I may provide another form such as is shown in Figs. 10ª to 13 in which the base or bottom part 18 of the heater and the curved and perforated top plate 15 remains the same but the top plate is supported from the base 18 by means of side plates 14^2 and 17^2 respectively, which plates are hinged as at 40, 41, 42, 43 and 44. These plates are held in extended or open position by means of a spreader 45. When it is desired to collapse the heater, the end plates 14^2 and 17^2 are folded into sections by means of the hinges 40 to 44 until the spreader 45 contacts with the base 18 as shown in Fig. 11 and the top plate 15 contacts with the spreader 45, whereby a very neat and carriable package is formed.

It will thus be seen that I have devised a very simple device which is effective as a heater because of the draught of air that it heats, because of its casing which permits a towel or clothing to be thrown thereover to be heated and dried and because when a moist towel is thrown over the device, it not only serves as a heater for the room but as a humidor as well in that the heat therefrom evaporates the moisture from the towel. The device also being readily collapsible, can be carried about from place to place by travellers and it can be easily set up anywhere for it only needs to be connected to an ordinary electrical socket to get it into operation.

What I claim is:

1. An electric heater comprising a base, a top, an electrical heating element in said base, and injector means for causing air heated by said heating element to rise eddyingly to said top.

2. The device of claim 1 in which said means include an injector formed around said heating element.

3. The device of claim 1 in which said means include obstructions placed in the path of the rising heated air.

4. An electric heater comprising a heating element, a casing surounding said element and curved deflectors on each side of

said element making an air inlet to the element and an air outlet therefrom.

5. The apparatus of claim 4 in which the air inlet is larger than the air outlet whereby the flow of air is impeded as it passes the heating element.

6. An electric heater comprising a base, an electrical heating element in said base adapted to heat a rising column of air, an apertured top for said heater, means for supporting the top spaced from said base, said top being adapted to support a towel whereby the free ends of the towel depend from said top and form sides for said heater.

7. An electric heater comprising a base, an electrical heating element in said base, a top, means forming a support between the base and top, and means for collapsing said supporting means.

8. The device of claim 7 in which the means for collapsing comprise hinges in said supporting means.

9. The device of claim 8 in which there are a plurality of supporting means, and the collapsing means comprise a plurality of oppositely operable hinges in each supporting means.

10. A combined electric heater and humidor comprising a base, an electrical heating element therein, a top on which a towel is supported, said towel forming the sides of said heater, said heating element causing a column of heated air to rise against said towel and pass therethrough, thereby giving out a moist heat.

11. A heater base having therein an electrical heating element, and a deflector plate on each side of said element, said plates jointly enclosing said element and forming an air inlet thereto and an air outlet therefrom, said air inlet being larger than said air outlet, said plates being spaced from the element a distance greater than the width of the air inlet.

In testimony whereof I have affixed my signature to this specification.

HUBERT MEREDITH-JONES.